AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Modified) A method of plasmon-induced multiband optical sensing or molecular identification comprising steps of: providing a composition capable of characteristic multiband spectral absorption or multiband spectral emission, the composition comprising a molecule and a plasmon-excited nanoparticle, wherein the molecule is located within plasmon fields of the nanoparticle and the molecule has a plasmon-induced multiband spectral property ~~nearby the molecule~~; allowing a sample containing an analyte to interact with the compositions; ~~exciting the composition by a plasmon source;~~ and monitoring the multiband spectral absorption or multiband spectral emission of the molecule for each interaction between the composition and the analyte of the sample.
2. The method of claim 1, wherein the molecule is an organic molecule, an inorganic molecule, a biomolecule or a microbe.
3. (Original) The method of claim 2, wherein the molecule is fluorophore and is selected from the group consisting of a protein, amino acid, oligonucleotide, lipid, sugar moiety, purine or pyrimidine, nucleoside or nucleotide, genetically engineered biomolecule, fluorescence dye, fluorescence biomarker, metal ligand charge transfer complex, up-converted fluorophore, fluorescence dendrimer, pair of fluorescent donor and fluorescent acceptor, pair of fluorescent donor and quencher, or fluorescent metal nanoparticle.
4. The method of claim 1, wherein the analyte is selected from the group consisting of glucose, inorganic molecule, organic molecule, protein, amino acid,

oligonucleotide, lipid, sugar moiety, purine or pyrimidine, nucleoside or nucleotide.

5. The method of claim 1, wherein the composition further comprising a spacer placed between the molecule and the nanoparticle and the spacer is selected from the group consisting of: a biorecognitive spacer, a dielectric spacer, a chemical link spacer, an analyte sensitive spacer or a polymer spacer.

6. The method of claim 1, wherein the nanoparticle is made of a conducting material, a super-conducting material or a semi-conducting material.

7. (Original) The method of claim 6, wherein the conducting material is selected from the group consisting of silver, ruthenium, platinum, rhenium, rhodium, osmium, iridium, copper, palladium and gold.

8. (Original) The method of claim 1, wherein the nanoparticle is sub-wavelength in size.

9.-12. Cancelled

13. The method of claim 1, wherein the composition is placed in a microarray, a bio-chip, a flow cell, an endoscope, a microscopic slide, a total internal reflection cell, a catheter, an optical fiber, a waveguide, a body, food, soil, water or air.

14. Cancelled

15. The method of claim 1, wherein the method comprises analyses of a low excited state or higher excited states of absorption bands or fluorescence bands of the molecule.

16. Cancelled

17. (Currently Modified) The method of claim 1, wherein the monitoring of the multiband absorption and/or the multiband emission of the molecule is performed by at least one of the selected techniques: absorption, fluorescence, <u>fluorescence</u>

lifetime, fluorescence polarization, fluorescence resonance energy transfer, hyperspectral imaging, Raman scattering, microscopy or microscopy imaging.

18-19. Cancelled

20. (Currently Modified) The method of claim 5, wherein the spacer modifies multiband emission, multiband absorption, multiband fluorescence polarization, or multiband fluorescence lifetime of the molecule.

Listing of Claims:

1. A method of plasmon-induced multiband optical sensing or molecular identification comprising steps of: providing a composition capable of characteristic multiband spectral absorption or multiband spectral emission, the composition comprising a molecule and a plasmon-excited nanoparticle, wherein the molecule is located within plasmon fields of the nanoparticle and the molecule has a plasmon-induced multiband spectral property; allowing a sample containing an analyte to interact with the compositions; and monitoring the multiband spectral absorption or multiband spectral emission of the molecule for each interaction between the composition and the analyte of the sample.
2. The method of claim 1, wherein the molecule is an organic molecule, an inorganic molecule, a biomolecule or a microbe.
3. The method of claim 2, wherein the molecule is fluorophore and is selected from the group consisting of a protein, amino acid, oligonucleotide, lipid, sugar moiety, purine or pyrimidine, nucleoside or nucleotide, genetically engineered biomolecule, fluorescence dye, fluorescence biomarker, metal ligand charge transfer complex, up-converted fluorophore, fluorescence dendrimer, pair of fluorescent donor and fluorescent acceptor, pair of fluorescent donor and quencher, or fluorescent metal nanoparticle.
4. The method of claim 1, wherein the analyte is selected from the group consisting of glucose, inorganic molecule, organic molecule, protein, amino acid, oligonucleotide, lipid, sugar moiety, purine or pyrimidine, nucleoside or nucleotide.
5. The method of claim 1, wherein the composition further comprising a spacer placed between the molecule and the nanoparticle and the spacer is selected from the group

consisting of: a biorecognitive spacer, a dielectric spacer, a chemical link spacer, an analyte sensitive spacer or a polymer spacer.

6. The method of claim 1, wherein the nanoparticle is made of a conducting material, a super-conducting material or a semi-conducting material.

7. The method of claim 6, wherein the conducting material is selected from the group consisting of silver, ruthenium, platinum, rhenium, rhodium, osmium, iridium, copper, palladium and gold.

8. The method of claim 1, wherein the nanoparticle is sub-wavelength in size.

9.-12. Cancelled

13. The method of claim 1, wherein the composition is placed in a microarray, a bio-chip, a flow cell, an endoscope, a microscopic slide, a total internal reflection cell, a catheter, an optical fiber, a waveguide, a body, food, soil, water or air.

14. Cancelled

15. The method of claim 1, wherein the method comprises analyses of a low excited state or higher excited states of absorption bands or fluorescence bands of the molecule.

16. Cancelled

17. The method of claim 1, wherein the monitoring of the multiband absorption and/or the multiband emission of the molecule is performed by at least one of the selected techniques: absorption, fluorescence, fluorescence lifetime, fluorescence polarization, fluorescence resonance energy transfer, hyperspectral imaging, Raman scattering, microscopy or microscopy imaging.

18.–19. Cancelled

20. The method of claim 5, wherein the spacer modifies multiband emission, multiband absorption, multiband fluorescence polarization, or multiband fluorescence lifetime of the molecule.